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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,483	07/16/2003	Takeshi Shioga	030844	7273

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EXAMINER	
GREENE, PERSHELLE L	
ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/619,483	SHIOGA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Pershelle Greene	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 26 April 2004.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 3,9 and 10 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,4-6 and 8 is/are rejected.
- 7) Claim(s) 7 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/16/03</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

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Serial Number: 10/619483

Attorney's Docket #: 030844

Filing Date: 7/16/03; claimed foreign priority to 7/18/02

Applicant: Shioga et al.

Examiner: Pershelle Greene

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Species II: Figures 3A-3B (claims 1, 2 and 4-9) in Paper No. 4/26/04 is acknowledged. However claim 9 is being withdrawn from consideration because it does not read on the elected embodiment.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2001-102512.

As to claim 1, figure 1 shows a carrier substrate 2 having an integrated circuit chip 1 mounted of the carrier substrate 2 through bumps 41. A capacitor 5 is provided to stabilize operation of the integrated circuit chip at high frequencies. The capacitor is electrically connected to the pads on the bottom of the integrated circuit chip 1, and the capacitor is provided to have a height on the carrier substrate 2 that is smaller than or equal to a height of the bumps 41 on the carrier substrate 2.

As to claim 2, the capacitor 5 is provided with a substrate having a bottom surface in contact with a top surface of the carrier substrate 2 on which the integrated circuit chip is mounted.

5. Claims 1, 2, 5, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 7-111226.

As to claim 1, figure 4 shows a carrier substrate 14 having an integrated circuit chip 12 mounted of the carrier substrate 14 through bumps 6. A capacitor 11 is provided to stabilize operation of the integrated circuit chip at high frequencies. The capacitor is electrically connected to the pads on the bottom of the integrated circuit chip 12, and the capacitor is provided to have a height on the carrier substrate 14 that is smaller than or equal to a height of the bumps 6 on the carrier substrate 14.

As to claim 2, the capacitor 11 is provided with a substrate having a bottom surface in contact with a top surface of the carrier substrate 14 on which the integrated circuit chip is mounted.

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As to claim 5, the capacitor is provided with a dielectric layer containing a dielectric oxide, and the dielectric oxide of the dielectric layer is made of a composite oxide, which contains Sr and Ti.

As to claim 6, the capacitor 6 is provided to have upper and lower electrodes, which interpose a dielectric layer therebetween, and the upper and lower electrodes containing Cu.

As to claim 8, the capacitor is a thin-film capacitor, which includes a substrate, an upper electrode, a lower electrode and a dielectric layer being interposed between the upper electrode and the lower electrode on the substrate of the capacitor.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 4 is being rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-102512, in view of Chen et al. (U.S. Patent # 5,548,474).

As to claim 4, claim 4 is being rejected for the same reasons stated above in regard to claim 1. However JP 2001-102512 fails to disclose the material of the semiconductor substrate.

Chen et al. is cited for showing electrical components such as capacitors having electrodes with an insulating edge. Specifically, Chen et al. discloses the use of a silicon substrate with a capacitor element. It would have been obvious to one of ordinary skill in the art to use the substrate of Chen et al for the purpose of providing variety to the available substrates.

8. Claim 4 is being rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-111226, in view of Chen et al. (U.S. Patent # 5,548,474).

As to claim 4, claim 4 is being rejected for the same reasons stated above in regard to claim 1. However JP 7-111226 fails to disclose the material of the semiconductor substrate.

Chen et al. is cited for showing electrical components such as capacitors having electrodes with an insulating edge. Specifically, Chen et al. discloses the use of a silicon substrate with a capacitor element. It would have been obvious to one of ordinary skill in the art to use the substrate of Chen et al for the purpose of providing variety to the available substrates.

#### *Claim Objections*

9. Claim 7 is being objected to as being dependent upon a rejected base claim.

#### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pershelle Greene whose telephone number is 571-272-1917. The examiner can normally be reached on M-F 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PLG  
May 14, 2004

NATHAN J. FLYNN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800